ELECTRONICS

6AY11

COMPACTRON DUPLEX-DIODE TWIN TRIODE

DESCRIPTION AND RATING

The 6AY11 is a compactron containing two high-mu triodes and two diodes. The diodes are intended for FM detector service and the triodes for audio-frequency voltage amplifier service.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current†	0.69	Amperes
Direct Interelectrode Capacitances‡		
Triode, Each Section		
Grid to Plate: (g to p)	2.2	pf
Input: g to (h+k)	2.0	pf
Output: p to (h+k)	0.22	pf
Diode, Each Section		
Plate to Cathode and Heater: p to (h+k)	2.0	pf
Cathode to Heater and Plate: k to (h+p)	5.5	pf
Triode Grid to Diode Plate, maximum	0.08	pf
Triode Grid, Section 1 to Triode Grid, Section 2, maximum	0.01	pf
Triode Plate, Section 1 to Triode Plate, Section 2	0.48	pf

MECHANICAL

Operating Position—Any
Envelope—T-9, Glass
Base—E12-70, Button 12-Pin
Outline Drawing—EIA 9-56

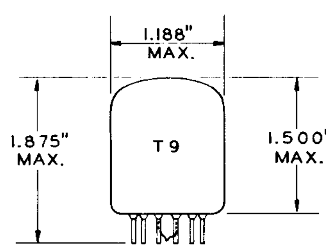
Maximum Diameter	1.188	Inches
Maximum Over-all Length	1.875	Inches
Maximum Seated Height	1.500	Inches

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, EACH SECTION

Plate Voltage	330	Volts
Positive DC Grid Voltage	0	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	1.0	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Diode Current for Continuous Operation, Each Diode	5.0	Milliamperes

PHYSICAL DIMENSIONS

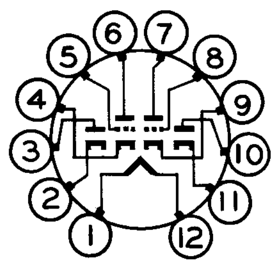


EIA 9-56

TERMINAL CONNECTIONS

Pin 1—Heater
Pin 2—Diode Cathode (Section 2)
Pin 3—Diode Plate (Section 2)
Pin 4—Triode Cathode (Section 2)
Pin 5—Triode Grid (Section 2)
Pin 6—Triode Plate (Section 2)
Pin 7—Triode Plate (Section 1)
Pin 8—Triode Grid (Section 1)
Pin 9—Triode Cathode (Section 1)
Pin 10—Diode Plate (Section 1)
Pin 11—Diode Cathode (Section 1)
Pin 12—Heater

BASING DIAGRAM



EIA 12DA

MAXIMUM RATINGS (Cont'd)

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, EACH SECTION

Plate Voltage	250	Volts
Grid Voltage	−2.0	Volts
Amplification Factor	100	
Plate Resistance, approximate	52700	Ohms
Transconductance	1900	Micromhos
Plate Current	1.2	Milliamperes
Average Diode Current, Each Diode With 5.0 Volts DC Applied	18	Milliamperes

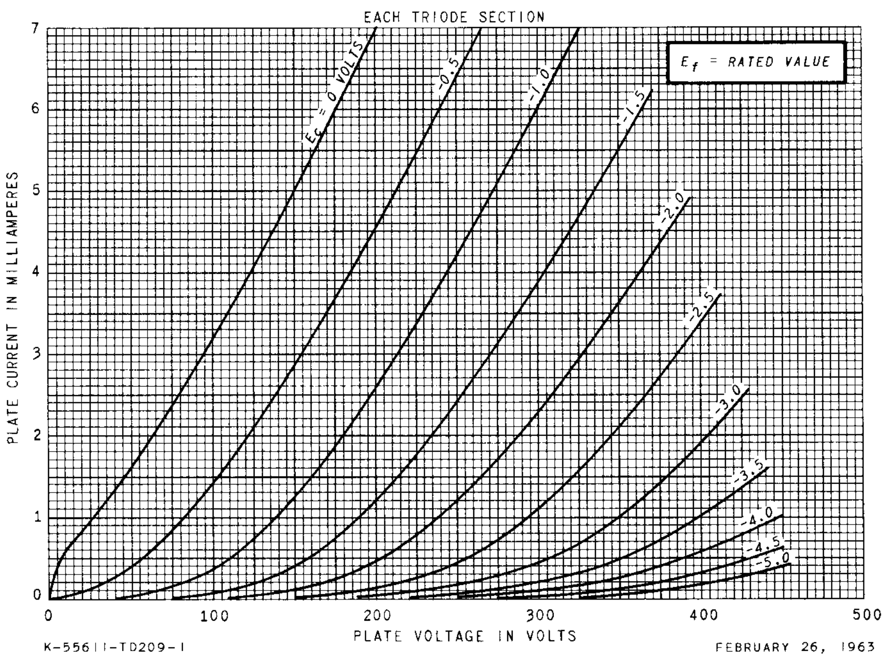
NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

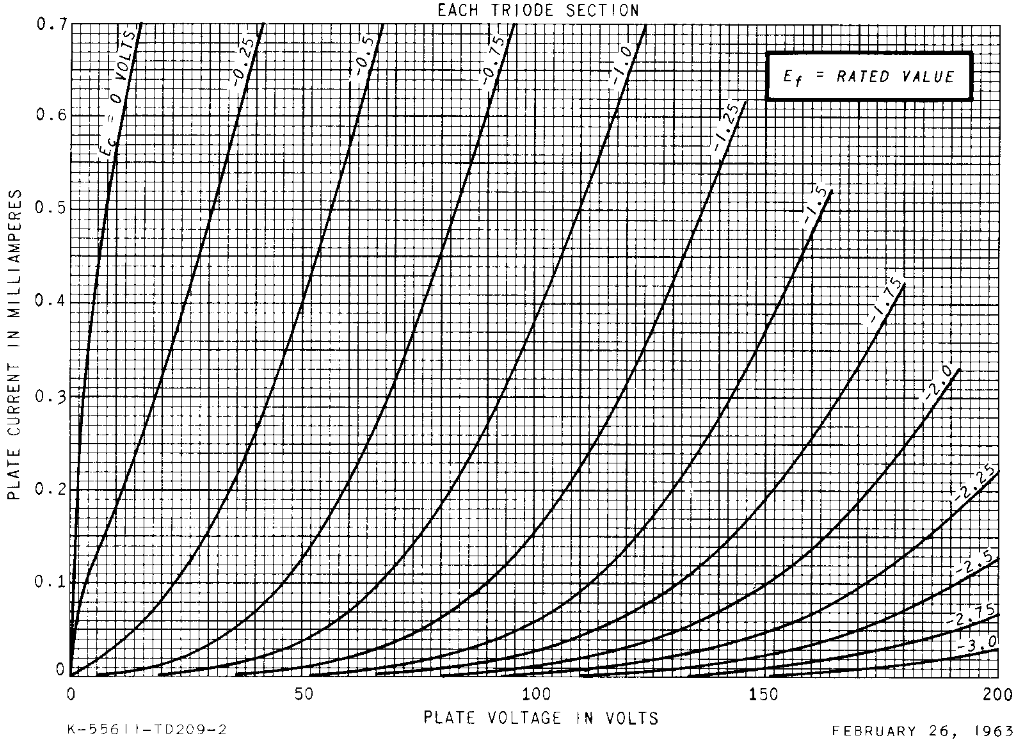
† Heater current of a bogey tube at Ef = 6.3 volts.

‡ Without external shield.

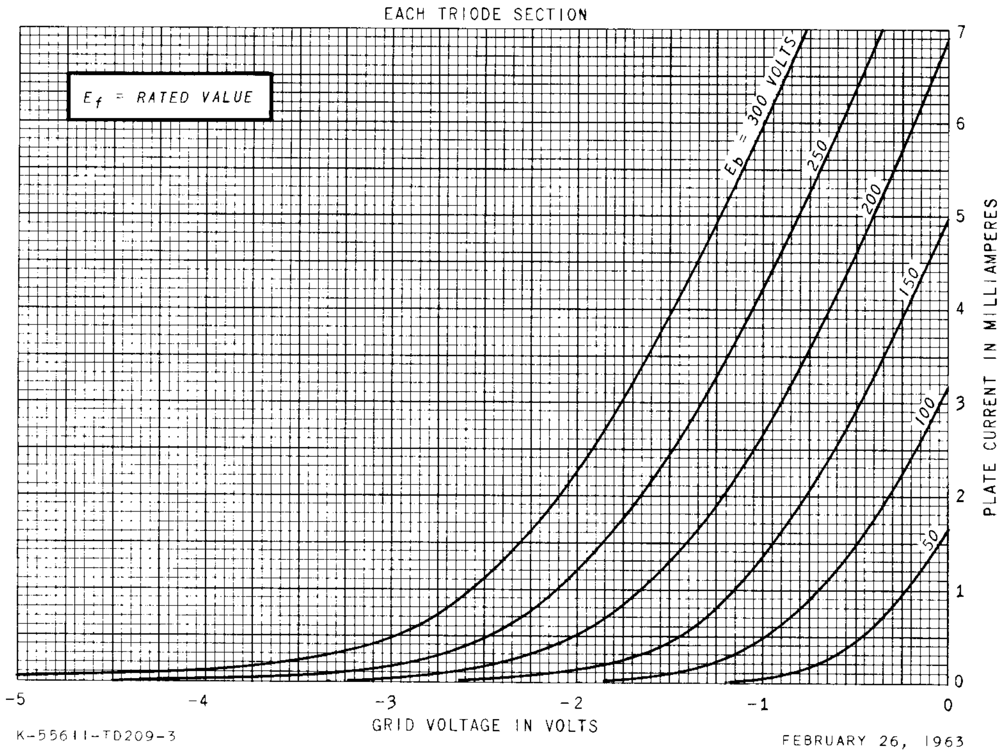
AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

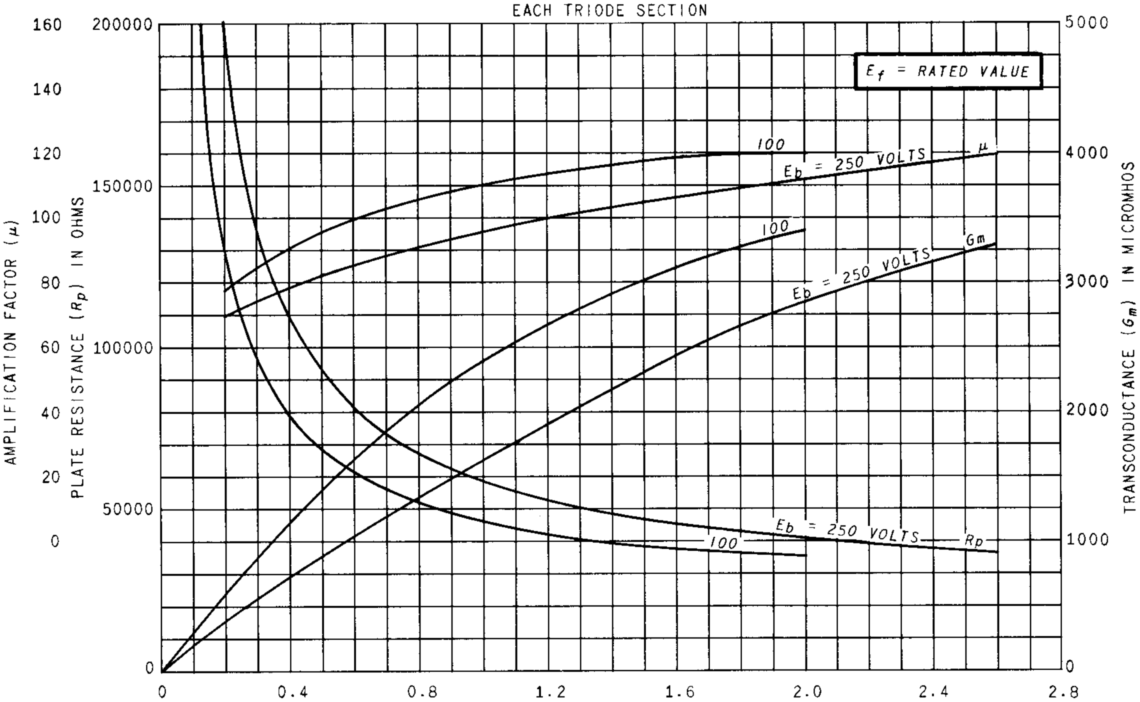


AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS

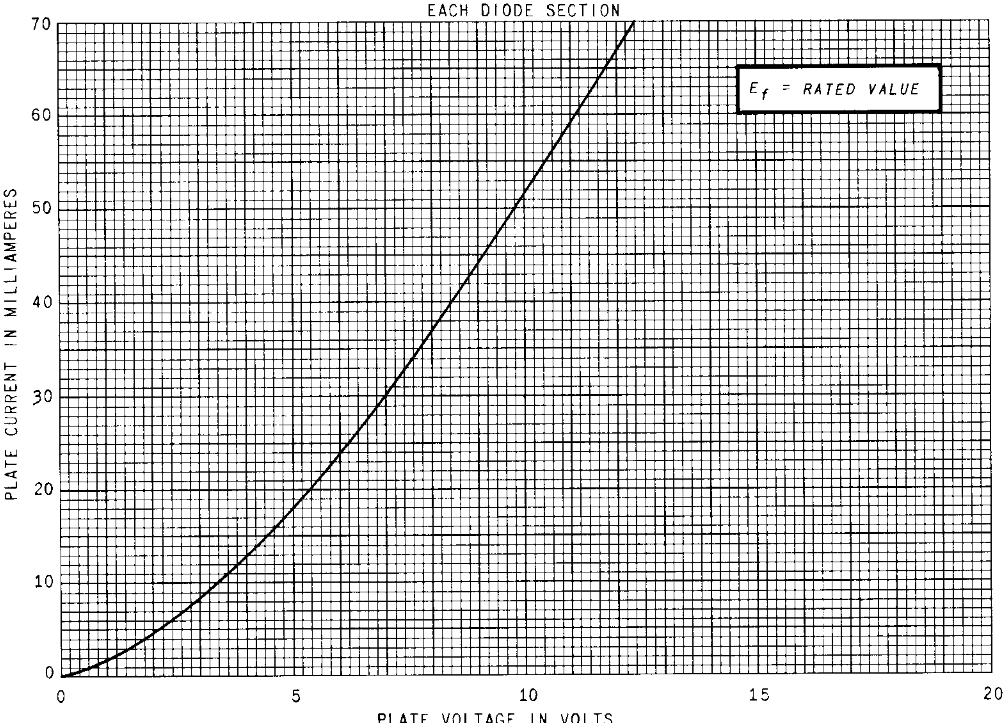
EACH TRIODE SECTION



K-55611-TD209-4 FEBRUARY 26, 1963

AVERAGE PLATE CHARACTERISTICS

EACH DIODE SECTION



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